Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A collision avoidance control system for a vehicle comprising:

a collision avoidance deceleration determining circuit working to determine a target collision avoidance deceleration required for a system vehicle equipped with this system to bring a relative speed between the system vehicle and a target object present ahead of the system vehicle into agreement with substantially zero without a physical collision with the target object; and

a control circuit working to determine a possibility of collision with the target object as a function of the target collision avoidance deceleration, when the possibility of collision is higher than a given threshold level, said control circuit performing a predetermined collision avoidance operation.

2. (Original) A collision avoidance control system as set forth in claim 1, wherein said collision avoidance deceleration determining circuit determines the target collision avoidance deceleration G according to an equation below

$$G = Vr^2 / \{ 2\times(D - Dfin)\} - Ka\times Af$$

where Vr is the relative speed between the system vehicle and the target object, D is a distance to the target object, $Dfin$ is a minimum distance to the target object that is to be reserved when the

relative speed *Vr* becomes zero (0), *Af* is acceleration of the target object, and *Ka* is a gain ($0 \leqq Ka \leqq 1$).

3. (Original) A collision avoidance control system as set forth in claim 2, wherein said collision avoidance deceleration determining circuit decreases at least one of the minimum distance *Dfin* and the gain *Ka* as the distance *D* increases.

4. (Original) A collision avoidance control system as set forth in claim 2, wherein said collision avoidance deceleration determining circuit decreases at least one of the minimum distance *Dfin* and the gain *Ka* as one of a speed of the system vehicle and the relative speed *Vr* decreases.

5. (Original) A collision avoidance control system as set forth in claim 1, wherein when the target collision avoidance deceleration exceeds a preselected alarm activating threshold value, said control circuit activates an alarm to output an alarm signal, when the target collision avoidance deceleration decreases below a preselected alarm deactivating threshold value, said control circuit deactivating the alarm to stop the alarm signal.

6. (Original) A collision avoidance control system as set forth in claim 1, further comprising a travel control apparatus working to determine a target acceleration as functions of a distance to the target object and the relative speed and to decelerate or accelerate the system vehicle based on the target acceleration to control a travel condition of the system vehicle, and wherein the alarm activating threshold value is identical with a maximum deceleration controllable by the travel control apparatus.

7. (Original) A collision avoidance control system as set forth in claim 1, wherein when the target collision avoidance deceleration exceeds a preselected deceleration control activating threshold value, said control circuit performs deceleration control to decelerate the system vehicle, when the target collision avoidance deceleration decreases below a preselected deceleration control deactivating threshold value, said control circuit deactivating the deceleration control.

8. (Original) A collision avoidance control system as set forth in claim 7, further comprising a travel control apparatus working to determine a target acceleration as functions of a distance to the target object and the relative speed and to decelerate or accelerate the system vehicle based on the target acceleration to control a travel condition of the system vehicle, and wherein the deceleration control activating threshold value is set greater than a maximum deceleration controllable by the travel control apparatus.

9. (New) A collision avoidance control system for a vehicle comprising:

a collision avoidance deceleration determining circuit working to determine a target collision avoidance deceleration required for a system vehicle equipped with this system to bring a relative speed between the system vehicle and a target object present ahead of the system vehicle into agreement with substantially zero without a physical collision with the target object; and

a control circuit working to determine a possibility of collision with the target object as a function of the target collision avoidance deceleration, said control circuit determining a controlled variable sequentially based on the possibility of collision which is required to avoid

the physical collision with the target object and controlling a deceleration of the system vehicle as a function of the controlled variable.

10. (New) A collision avoidance control system as set forth in claim 9, wherein said collision avoidance deceleration determining circuit determines the target collision avoidance deceleration G according to an equation below

$$G = Vr^2 / \{ 2\times(D - Dfin)\} - Ka\times Af$$

where Vr is the relative speed between the system vehicle and the target object, D is a distance to the target object, $Dfin$ is a minimum distance to the target object that is to be reserved when the relative speed Vr becomes zero (0), Af is acceleration of the target object, and Ka is a gain ($0 \leqq Ka \leqq 1$).

11. (New) A collision avoidance control system as set forth in claim 10, wherein said collision avoidance deceleration determining circuit decreases at least one of the minimum distance $Dfin$ and the gain Ka as the distance D increases.

12. (New) A collision avoidance control system as set forth in claim 10, wherein said collision avoidance deceleration determining circuit decreases at least one of the minimum distance $Dfin$ and the gain Ka as one of a speed of the system vehicle and the relative speed Vr decreases.

13. (New) A collision avoidance control system as set forth in claim 9, wherein when the target collision avoidance deceleration exceeds a preselected alarm activating threshold value, said control circuit activates an alarm to output an alarm signal, when the target collision avoidance deceleration decreases below a preselected alarm deactivating threshold value, said control circuit deactivating the alarm to stop the alarm signal.

14. (New) A collision avoidance control system as set forth in claim 13, further comprising a travel control apparatus working to determine a target acceleration as functions of a distance to the target object and the relative speed and to decelerate or accelerate the system vehicle based on the target acceleration to control a travel condition of the system vehicle, and wherein the alarm activating threshold value is identical with a maximum deceleration controllable by the travel control apparatus.

15. (New) A collision avoidance control system as set forth in claim 9, wherein when the target collision avoidance deceleration exceeds a preselected deceleration control activating threshold value, said control circuit performs deceleration control to decelerate the system vehicle, when the target collision avoidance deceleration decreases below a preselected deceleration control deactivating threshold value, said control circuit deactivating the deceleration control.

16. (New) A collision avoidance control system as set forth in claim 15, further comprising a travel control apparatus working to determine a target acceleration as functions of a distance to the target object and the relative speed and to decelerate or accelerate the system vehicle based on the target acceleration to control a travel condition of the system vehicle, and wherein the

deceleration control activating threshold value is set greater than a maximum deceleration controllable by the travel control apparatus.